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Horst Wittur

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3803

24628

7590

07/05/2006

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EXAMINER

PICO, ERIC E

ART UNIT

PAPER NUMBER

3654

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/612,334	WITTUR ET AL.	
	Examiner	Art Unit	
	Eric Pico	3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-10 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10 and 12-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>01/03/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the minor undercut portions claimed in claim 4 and single-layer round core cables claimed in claim 17 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim(s) 1, 2, 4, 10, and 15-17 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi U.S. Patent No. 6626266 in view of Heikkinen U.S. Patent No. 4756388, Damien U.S. Patent No. 5651245, and Wilcox U.S. Patent No. 4624097.

4. **Regarding claim 1**, Hamaguchi discloses a gearless cable-operated elevator comprising a drive sheave drive 10 wrapped by several parallel carrier cables 14 with a spaced counter sheave 17 and arranged above a cage 4 with guide rails 6, 7 being provided for the cage 4 and a counterweight 5 being attached to the carrier cables 14, for a machine-room-free installation, characterized in that the carrier cables run in semicircular grooves in the sheaves 10, 17.

5. Hamaguchi is silent concerning a drive sheave drive twice wrapped by several parallel carrier cables with a spaced counter sheave, characterized in that the carrier cables are steel cables and that the ratio of the drive sheave diameter to the nominal diameter of the carrier cables is less than 40.

6. Heikkinen teaches a drive sheave drive 3 twice wrapped by several parallel carrier cables 4 with a spaced counter sheave 2.

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7. Damien teaches carrier cables 1 are steel cables 21.
8. Wilcox teaches the ratio of a drive sheave diameter to the nominal diameter of carrier cables less than 40, shown in Column 3, Lines 5-23.
9. It would have been obvious to one of ordinary skill in the art at the time of the invention to twice wrap several parallel carrier cables as taught by Heikkinen around the drive sheave drive and the spaced counter sheave disclosed by Hamaguchi to use thinner cables thereby reducing the diameter of the traction sheave, as a result, the torque on the shaft of the gearless motor will be less and it also becomes possible to use a smaller motor.
10. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the carrier cables disclosed by Hamaguchi steel cables as taught by Damien to have a very good uniformity of diameter, reduce permanent elongation and reduce risk to damage of members for winding the cable.
11. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to characterize the ratio of the drive sheave diameter to the nominal diameter of the carrier cables disclosed by Hamaguchi less than 40 as taught by Wilcox to decrease the diameter of the drive sheave and reduce the torque required to drive the elevator. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.
12. **Regarding claim 2**, Hamaguchi is silent concerning the ratio of the drive sheave diameter to the nominal diameter of the carrier cables being essentially 30.

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13. Wilcox teaches the ratio of the drive sheave diameter to the nominal diameter of the carrier cables being essentially 30.

14. It would have been obvious to one of ordinary skill in the art at the time of the invention to characterize the ratio of the drive sheave diameter to the nominal diameter of the carrier cables disclosed by Hamaguchi being essentially 30 as taught by Wilcox to decrease the diameter of the drive sheave and reduce the torque required to drive the elevator. Furthermore, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ (CCPA 1980).

15. **Regarding claim 4**, Hamaguchi discloses semicircular grooves have minor undercut portions.

16. Hamaguchi is silent concerning semicircular grooves have minor undercut portions each with a width between 1 and 3 mm.

17. It would have been obvious to one of ordinary in the art at the time of the invention was made to make the minor undercut portions disclosed by Hamaguchi each with a width between 1 and 3 mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

18. **Regarding claim 10**, Hamaguchi is silent concerning the drive sheave and the counter sheave of the drive sheave drive are vertically arranged with respect to one another and in the area of a shaft head in the area of a shaft pit.

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19. Heikkinen teaches a drive sheave 3 and counter sheave 2 of drive sheave that are vertically arranged with respect to one another and in the area of shaft head in the area of a shaft pit, shown in Figure 1.

20. It would have been obvious to one of ordinary skill in the art at the time of the invention to arrange the drive sheave and the counter sheave of the drive sheave disclosed by Hamaguchi vertically with respect to one another and in the area of a shaft head in the area of a shaft pit as taught by Heikkinen to accommodate the elevator components within the environmental restraints of the shaft.

21. **Regarding claim 15**, Hamaguchi discloses a cage suspension for the elevator (Embodiment 1) with a ratio of 1 to 1 (Figures 1, 2, and 3).

22. **Regarding claim 16**, Hamaguchi discloses a loose pulley cage suspension for the elevator (Embodiment 2) with a ratio of 2 to 1 (Figures 6 and 7).

23. **Regarding claim 17**, Hamaguchi is silent concerning the carrier cables single-layer round core cable.

24. Damien teaches single-layer round core 3 cable 1.

25. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the carrier cables disclosed by Hamaguchi single-layer round core cable as taught by Damien to have a very good uniformity of diameter, reduce permanent elongation and reduce risk to damage of members for winding the cable.

26. Claim(s) 5 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi U.S. Patent No. 6626266 in view of Heikkinen U.S. Patent No. 4756388,

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Damien U.S. Patent No. 5651245, and Wilcox U.S. Patent No. 4624097 as applied to claim 1 above, and further in view of De Angelis et al. U.S. Patent No. 5566786.

27. **Regarding claim 5**, Hamaguchi is silent concerning the carrier cables have a nominal diameter between 5 to 7 mm.

28. De Angelis et al. teaches a synthetic fiber cable able to have a nominal diameter between 5 to 7 mm reducing the drive sheave significantly.

29. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the synthetic cable taught by De Angelis et al. with a nominal diameter between 5 to 7 mm to further decrease the diameter of the drive sheave. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

30. Claim(s) 6 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi U.S. Patent No. 6626266 in view of Heikkinen U.S. Patent No. 4756388, Damien U.S. Patent No. 5651245, and Wilcox U.S. Patent No. 4624097 as applied to claim 1 above, and further in view of Aulanko et al. U.S. Patent No. 5429211 and De Angelis et al. U.S. Patent No. 5566786.

31. **Regarding claim 6**, Hamaguchi is silent concerning the elevator configured for useful cage loads of up to 2000kg and the carrier cables have a nominal diameter of essentially 7 mm, and the ratio of the drive sheave diameter to the nominal diameter of the carrier cables preferably being about 34.

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32. Aulanko et al. teaches a passenger elevator system with a load capacity of 800 kg.

33. De Angelis et al. teaches a synthetic fiber cable able to have a nominal diameter of essentially 7 mm reducing the drive sheave significantly.

34. It would have been obvious to one of the ordinary skill in the art at the time of the invention to configure the passenger elevator system of Hamaguchi for useful cage loads of up to 2000 kg as taught by Aulanko et al. Further, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ (CCPA 1980).

35. It would have been obvious to one of the ordinary skill in the art at the time of the invention to use the synthetic cable taught by De Angelis et al. with a nominal diameter essentially 7 mm to further decreasing the ratio of diameter of the drive sheave to nominal diameter of the carrier cables to about 34. Further, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ (CCPA 1980).

36. Claim(s) 7 and 9 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi U.S. Patent No. 6626266 in view of Heikkinen U.S. Patent No. 4756388, Damien U.S. Patent No. 5651245, and Wilcox U.S. Patent No. 4624097 as applied to claim 1 above, and further in view of Aulanko et al. U.S. Patent No. 5429211.

37. **Regarding claim 7**, Hamaguchi is silent concerning the elevator being configured for useful cage loads between 300 kg and 1000 kg in particular.

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38. Aulanko et al. teaches a passenger elevator system with a load capacity of 800 kg.

39. It would have been obvious to one of the ordinary skill in the art at the time of the invention to configure the passenger elevator system of Hamaguchi for useful cage loads between 300 kg and 1000 kg as taught by Aulanko et al. Further, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

40. **Regarding claim 9**, Hamaguchi is silent concerning the elevator characterized in that, for adaption to the occurring cable forces alone, the number of applied carrier cables is variable in the drive sheave drive.

41. Aulanko et al. teaches the drive sheave having a plurality of cable grooves 19 on its drive sheave 18 by which the number of applied carrier cables can be varied due to occurring cable forces alone

42. It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the number of applied cables as taught by Aulanko et al. in the drive sheave disclosed by Hamaguchi to adapt to the occurring cable forces.

43. Claim(s) 8 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi U.S. Patent No. 6626266 in view of Heikkinen U.S. Patent No. 4756388, Damien U.S. Patent No. 5651245, and Wilcox U.S. Patent No. 4624097 as applied to claim 1 above, and further in view of Honda U.S. Patent No. 4591025.

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44. **Regarding claim 8**, Hamaguchi is silent concerning the counter sheave serves simultaneously as a distancing deflection sheave.

45. Honda teaches an elevator system configured in that counter sheave 2 is simultaneously a distancing deflection sheave.

46. It would have been obvious to one of the ordinary skill in the art at the time of the invention to configure the elevator system of Hamaguchi in that counter sheave 2 is simultaneously a distancing deflection sheave as taught by Honda to reduce the number of sheaves creating more area in the hoistway.

47. Claim(s) 12-14 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi U.S. Patent No. 6626266 in view of Heikkinen U.S. Patent No. 4756388, Damien U.S. Patent No. 5651245, and Wilcox U.S. Patent No. 4624097 as applied to claim 1 above, and further in view of Hollowell International Publication No. 99/43595.

48. **Regarding claim 12**, Hamaguchi is silent concerning the drive sheave and the counter sheave of the drive sheave drive are arranged on the bottom or on the roof of the cage.

49. Hollowell et al. teaches an elevator system, characterized in that a drive sheave 30 and a counter sheave 34 of the drive sheave drive are arranged on the bottom of a cage 16.

50. It would have been obvious to one of ordinary skill in the art at the time of the invention to arrange the drive sheave and the counter sheave of the drive sheave drive

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disclosed by Hamaguchi on the boom of the cage as taught by Hollowell et al. to accommodate the elevator components within the environmental restraints of the shaft.

51. **Regarding claim 13**, Hamaguchi is silent concerning the drive sheave drive is fixed to an elevator frame for the elevator.

52. Hollowell et al. discloses an elevator system, characterized in that drive sheave 30 is fixed to an elevator frame 16 for the elevator.

53. It would have been obvious to one of ordinary skill in the art at the time of the invention to fix the drive sheave drive disclosed by Hamaguchi to an elevator frame for the elevator as taught by Hollowell et al. to reduce space within the hoistway and facilitate easy access to the elevator drive sheave.

54. **Regarding claim 14**, Hamaguchi is silent concerning holding elements for the drive sheave drive are integrated in a cage frame or in a cage main support.

55. Hollowell et al. teaches an elevator system, characterized in that holding elements for the drive sheave 30 are integrated in the cage frame 16.

56. It would have been obvious to one of ordinary skill in the art at the time of the invention to integrate holding elements to the drive sheave drive disclosed by Hamaguchi a cage frame as taught by Hollowell et al. to reduce space within the hoistway and facilitate easy access to the elevator drive sheave.

57. Claim(s) 18 and 19 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi U.S. Patent No. 6626266 in view of Heikkinen U.S. Patent No. 4756388, Damien U.S. Patent No. 5651245, and Wilcox U.S. Patent No. 4624097 as applied to claim 1 above, and further in view of Aulanko et al. U.S. Patent No. 5665944.

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58. **Regarding claim 18**, Hamaguchi is silent concerning a motor of the drive sheave drive is a three-phase asynchronous motor or a three-phase synchronous motor.

59. Aulanko et al. teaches a three-phase asynchronous and three-phase synchronous drive sheave motor for use in a gearless elevator system. The use of the motor taught by Aulanko et al. minimizes the drive sheave as well as adds additional space within the hoistway due to its small size.

60. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the motor disclosed by Hamaguchi a three-phase asynchronous or three-phase synchronous drive sheave motor as taught by Aulanko et al. to minimize space within the elevator hoistway as well as drive the elevator system

61. **Regarding claim 19**, Hamaguchi is silent concerning a motor of the drive sheave drive embodied without mechanical emergency braking device.

62. Aulanko et al. teaches a drive sheave embodied without a mechanical emergency stop braking device to minimize the size of the drive sheave as well as prolong the life span of the drive sheave

63. It would have been obvious to one of the ordinary skill in the art at the time of the invention to make the drive sheave disclosed by Hamaguchi a drive sheave embodied without a mechanical emergency stop braking device as taught by Aulanko et al. to increase the life span of the drive sheave.

Response to Arguments

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64. Applicant's arguments filed 01/03/2006 have been fully considered but they are not persuasive.

65. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the cable guided from drive sheave 2 to the counter sheave 3, back to the drive sheave 2, wrapped around the drive sheave 2, back to the counter sheave 3) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

66. In response to applicant's argument that the Examiner cites col. 2, lns. 25-28 of Heikkinen regarding the ratio of drive sheave diameter to nominal diameter is not persuasive. Examiner states, "In regards to the ratio of drive sheave diameter to nominal diameter of carrier cables being 40. The acknowledged prior art discloses in the application that this is a common calculation rule to which the drive sheave diameter is to correspond at least to 40-times the carrier cables diameter, see Page 3, Lines 16-19."

67. In response to applicant's argument that De Angelis et al. teaches away from selecting several parallel steel carrier cables wrapped twice around the drive sheave. The argument that De Angelis et al. teaches away from the solution of the present invention relies upon the assertion that because De Angelis et al. discusses the advantages of "a synthetic fiber cable because, in comparison with steel cables, they permit a substantially larger number of bending change (cf. col. 2 lns. 59-61)", De Angelis et al. teaches away from the solution of the present invention. This argument is

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without merit because, while the preferred embodiment of De Angelis et al. may show synthetic fiber cable, a statement indicating the desirability of having steel cables in no way criticizes, discredits, or otherwise discourages the solution claimed. De Angelis et al., therefore, in no way teaches away from the solution of the present invention.

68. In response to applicant's argument that there is no motivation to modify the carrier cables disclosed by Hamaguchi with the steel lifting cables of Damien. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Firstly, it should be noted that there is no requirement that an express, written motivation to combine must appear in prior art references before a finding of obviousness. In addition to the teachings of the references themselves, the motivation to combine references may be found in the nature of the problem to be solved or the knowledge of persons of ordinary skill in the art. Furthermore, while there must be a motivation to make the claimed invention, there is no requirement that the prior art provide the same reason as the applicant to make the claimed invention. In this case, the motivation to modify the carrier cables disclosed by Hamaguchi with the steel lifting cables of Damien comes from the teachings of Damien to have a very good uniformity of diameter, reduced permanent elongation, and does not give rise to damage of members for winding the cable.

Conclusion

69. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Pico whose telephone number is 571-272-5589. The examiner can normally be reached on 6:30AM - 3:00PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katherine Matecki can be reached on 571-272-6951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EEP

A handwritten signature in black ink that reads "Kathy Matecki". The signature is written in a cursive, flowing style.

KATHY MATECKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600